Technology Needs Assessments: TNA and TAP templates

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Technology Needs Assessments

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TNA and TAP template

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(Round one countries)

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What the TNA should be able to achieve?

COP requirements for GEF to support TNAs in developing countres, in order to:

- To build roadmap for internal mitigation and adaptation policy-making (something like readiness plan for tech deployment and transfer)
- To elaborate countries' positions, status, and needs for support in climate negotiations (similar to National Communications)
- To access future international support (technology transfer mechanism, funding, and capacity building)

TNA Report and TAP

- The TNA (Technology Need Assessment) and TAP (Technology Action Plans) will be the main deliverables from participating countries under the TNA project
- Most existing TNA reports focuses on technology prioritisation and needs assessment
- The current project goes further, includes barrier analysis and enabling framework, and TAPs

The TNA & TAP templates

- To meet the reporting requirements of the current TNA project
- Prepared in reference to the formats / templates for similar purposes:
  1. The TNA contents suggested in the UNDP Handbook
  2. Recommended contents of a technology needs assessment synthesis report
  3. The Template for Project Proposal for Technology Transfer Financing in UNFCCC (2006) Preparing and presenting proposals
  4. The three UNFCCC Methodology guidelines for Technology Needs Assessment
  5. Summaries about how the existing TNA look like in the UNFCCC, 2009 report '2nd synthesis report on technology needs identified by Parties not included in Annex I to the Convention'
  6. The UNFCCC technical report (2007) 'Best practices in technology needs assessments'
  7. The main Contents of National Communications by Non-Annex I countries
  8. The UNFCCC 'Step-by-Step Guide for Implementation NAPAs
  9. Project and Programs- requirements from PIF and other documents.

TNA + TAP

- TNA report: to be finished as an intermediate report under the TNA project

- TNA and TAPs will then be integrated into one final report

- The differences between TNAs and TAPs: Two independent deliverables but TNAs pre-requisite to TAP preparation.

TNA vs TAP

		1st Half of Project Duration	2nd Half of Project duration
Working contents	Mitigation	TNA	TAPs
	Adaptation	TNA	TAPs
Deliverables	Mitigation	TNA report •Sector selection •Technology selection & prioritisation	Integrated report on Mitigation TNA and TAPs Technology action plan • Development of Enabling framework (including timelines and targets) • IPR barriers and needs for international support/inputs for the international technology mechanism • Program ideas
	Adaptation	TNA report	Integrated report on Adaptation TNA and TAPs

Barriers to tech transfer commonly identified in TNA reports (source: UNFCCC 2009 synthesis report)

Economic • Lack of financial resources • High level of debt • Incompatible prices, and subsidies and tariffs • Lack of incentives • Lack of participation of national banks in technology transfer activities, and high interest rates • High up-front costs • Inflation/uncertainty in prices	**Information/awareness** • Lack of access to information • Lack of access to relevant technical data • Lack of awareness about issues related to climate change, options for mitigation and adaptation, and advanced technologies • Lack of information about potential donors and project developers
Market • Unstable market situation (the case in many countries), which hinders the procurement of international technological investment from donors • Low income among consumers • Well-established more competitive/cheaper • alternatives • Undeveloped economic infrastructure • Disturbed or non-transparent markets • Monopolistic utility model • Lack of contact with overseas markets	**Human** • Lack of skill/expertise in dealing with the various aspects of projects related to climate change, i.e. greenhouse gas inventories and assessing mitigation and adaptation options and implementing them • Lack of skilled personnel for the installation and operation of environmentally sound technologies (ESTs) • Inadequate personnel for preparing projects • Lack of confidence in new ESTs • Rigid traditions • Lack of social acceptance of technologies • Dispersed/widely distributed settlements

Barriers to tech transfer commonly identified in TNA reports (source: UNFCCC 2009 synthesis report)

Organizational and institutional	**Regulatory and policy-related**
• Limited institutional capacity, and management and organizational experience • Lack of institutional capacity to solicit ideas and encourage potential entrepreneurs • Insufficient coordination between relevant ministries and other stakeholders • Lack of technological standards and institutions to support these standards • Lack of development in the public sector	• Existing laws and policies that may not be compatible with measures related to climate change mitigation and adaptation • Lack of necessary policies, regulations, standards and codes • Absence of incentives to develop renewable energy technology (RET), owing to small profit compared with invested capital • Absence of a plan for the development of the rural power grid • Absence of laws on energy savings and the RET sector • Political instability
Technical • Complexity of new technology/not enough expertise • Limited scientific data on technology transfer options • Imported equipment • Lack of service and maintenance specialists • Lack of spare parts for new imported products and technology • Insufficient quantity of controlling and measuring devices	Other • Unpredictable climate/weather • Poor soil quality • Landscape • Low availability of inland space for placing alternative casements • Inadequate time available for undertaking specific studies and research on the impacts of climate change

The five key activity themes of the technology transfer framework under the UNFCCC

- Technology needs and needs assessments
- The technology information
- The enabling environments
- Capacity-building
- Mechanisms for technology transfer

Main contents of TAP

- Barrier analysis
- Enabling framework
- Action plans and proposals
  - ✓ Domestic action plans (Prioritized set of actions to enhance market penetration- policies, regulations etc. with timelines and targets, responsible actors/institutions)
  - ✓ Political process ensuring buy in by politicians
  - ✓ Resource requirements
    - ✓ Financing needs (external, national) specified
  - ✓ Program ideas and Projects

Roadmap for domestic action plans and policies

(Prioritized set of actions to enhance market penetration- policies, regulations etc.)

- Name of the domestic action/policy
- Objectives
- Description of activities/measures
- Short-term, medium term, and long term goals
- Timelines and targets
- Responsible actors/institutions
- Needs for funding, and other resources
- Plan for fund raising and obtainment of other resources
- Organisations/government agencies/stakeholders involved
- Indicators of success (monitoring, action/measure review)
- Uncertainties and risks

NAPA project proposals

- **Type & Name of Project**
- **Rationale**
- **Description**
  - ✓ Objectives and activities
  - ✓ Inputs and Activities
  - ✓ Short-term outputs
  - ✓ Potential long-term outcomes
  - ✓ Location
  - ✓ Time frame

Implementation

  - ✓ Institutional arrangement
  - ✓ Risks and barriers
  - ✓ Evaluation and monitoring:

Finacing

  - ✓ Cost estimated:
  - ✓ Potential sources of funding

Program Ideas / Projects

- **Introduction/Background (**Briefly describe the program / project and how it developed)
- **Purpose and Objectives (**What will the program / project accomplish? What are the objectives and are they measurable?
- **Relationship to the the country's sustainable development priorities (**How does it relate to the mission and key strategies? Is it a new development? Is it a crisis?)
- **Program / Project Deliverables e.g. Value/Benefits/Messages (**Why it is important and necessary?)
- **Program / Project Scope and Possible Implementation (**How broad is the program / project? How feasible is it? Is it related to a current or past projects?)
- **Timelines (**What are the timelines e.g. one quarter, one year, multiple years?)
- **Budget/Resource requirements (**What is the budget? How is the program / project to be funded? (Staff, Engage consultants, partnership, etc.)
- **Measurement/Evaluation** (What tangible evaluation of accomplishments are there?)
- **Possible Complications/Challenges (W**hat are the potential challenges and complications?)
- **Responsibilities and Coordination (**Who does what, when and how?)

IPR Barriers and needs for international support

- Description of the IPR barriers (current technology level in the country and technology transfer targets, owners of the technology IPR/know-how)

- Suggestions/ideas about domestic/international support to overcome the IPR barriers

Outlines of the Integrated Report of Mitigation TNA and TAPs

Executive Summary (3-4 pages)

Section 1. TNA for mitigation (30 pages)

(TNA for covering around 2-3 sectors, 8-10 technologies)

Section 2. TAPs for Prioritised Technologies (50 pages)

8-10 TAPs for 8-10 technologies from 2-3 sectors

Section 3. Cross cutting issues (10 pages)

Section 1. TNA on mitigation (30 pages)

1.1 Introduction

- Objectives of the TNA,
- brief introduction about the national circumstances,
- National sustainable development strategies
- National climate change policies and actions
- TNA relevance to national development priorities

1.2 Institutional arrangement for the TNA

- TNA team, national project coordinator, consultants…)
- stakeholders involvement

1.3 Sector prioritization

- An overview of sectors, including GHG emissions and the potential for GHG reduction (for Mitigation TNA) and/or adaptation to the adverse effects of climate change (for Adaptation TNA);
- Process and criteria of prioritization
- Results of prioritization (Sector A, B, and C selected)

Section 1. TNA on mitigation (30 pages)

- Technology prioritization for Sector A
  - An overview of mitigation technologies in Sector
  - Criteria and process of technology prioritization
  - Results of sector prioritization
- Technology prioritization for Sector B
  - An overview of mitigation technologies in Sector
  - Criteria and process of technology prioritization
  - Results of sector prioritization
- Technology prioritization for Sector C
  - Mitigation tech overview for Sector C
  - Criteria and process of technology prioritization
  - Results of sector prioritization
- Stakeholder Engagement Process followed in TNA

- References

Section 2. TAPs for Prioritised Technologies (50 pages)

2.1 Introduction

2.2 TAPs for the 2-3 prioritized technologies (A1, A2, A3) for Sector A

2.3 TAPs for the 2-3 prioritized technologies (B1, B2, B3) for Sector B

2.4 TAPs for the 2-3 prioritized technologies (C1, C2, C3) for Sector C

2.2.1 TAP for Technology A1

- Technology Strategies/objectives

  (R&DDD to be achieved in the planning period ?)
- Barrier analysis (Economic barriers; Regulatory barriers/institutional barriers; Knowledge/capacity barriers, etc)
- Enabling framework to overcome the barriers
  - ✓ Overall enabling framework
  - ✓ Domestic action plans (development of enabling framework – with timelines and targets

    (for technology research and development, deployment, and diffusion, along with resource requirement)
  - ✓ Program / Project ideas (including capacity building, financing needs)

Similarly for technologies A2, A3 etc.

Section 3 Cross-cutting issues

- Issues and action plans that are common to multiple mitigation technologies
- Possible interactions between the different TAPs for different technologies
- Example: reducing subsidies to fossil fuel may make it easier for both energy efficiency technologies and renewable energy technologies; coordination between government departments can lead to more effective implementation of policies

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The TNA and TAP templates are still draft and comments welcome from all.

Thanks.